

CLAIMS

1. An optical film comprising a birefringent layer (a) and a transparent film (b), wherein the birefringent layer is laminated on the transparent film, satisfying all the following formulae (I), (II) and (III):

5 $\Delta n(a) > \Delta n(b) \times 10$ (I)

1 $< (n_x - n_z) / (n_x - n_y)$ (II)

0.0005 $\leq \Delta n(a) \leq 0.5$ (III)

10 $\Delta n(a)$ is a birefringent index of the birefringent layer (a) and $\Delta n(b)$ is a birefringent index of the transparent film (b), respectively represented by the following equations:

$\Delta n(a) = [(n_x + n_y) / 2] - n_z$

$\Delta n(b) = [(n_x' + n_y') / 2] - n_z'$,

15 in the above formulae (II) and the above-stated equations, n_x , n_y and n_z indicate respectively refractive indexes in an X-axis direction, a Y-axis direction and a Z-axis direction in the birefringent layer (a); n_x' , n_y' and n_z' indicate respectively refractive indexes in an X-axis direction, a Y-axis direction and a Z-axis direction in the transparent film (b); and the X-axis corresponds to an axial direction exhibiting a maximum refractive index within a plane of the birefringent layer (a) and the transparent film (b), the Y-axis corresponds to an axial direction perpendicular to the X-axis within the plane, and the Z-axis corresponds to a thickness direction perpendicular to the X-axis and the Y-axis.

20 25 2. The optical film according to claim 1, wherein the birefringent layer (a) is laminated directly on the transparent film (b).

30 3. The optical film according to claim 1, wherein the birefringent layer (a) comprises a non-liquid crystal material.

35 4. The optical film according to claim 3, wherein the non-liquid crystal material is at least one polymer material selected from the group consisting of polyamide, polyimide, polyester, polyetherketone, polyamide imide, and polyester imide.

5. The optical film according to claim 1, obtained by coating the

material of the birefringent layer (a) directly on the transparent film (b) having a shrinking property so as to form a coating film, and shrinking the coating film in accordance with the shrinkage of the transparent film (b).

- 5 6. The optical film according to claim 5, wherein the transparent film (b) is shrunk by heat.
- 10 7. The optical film according to claim 1, obtained by coating the material of the birefringent layer (a) directly on the transparent film (b) so as to form a coating film, and stretching both the transparent film (b) and the coating film concurrently.
- 15 8. The optical film according to claim 1, further comprising at least one of an adhesive layer and a pressure-sensitive adhesive layer.
- 20 9. The optical film according to claim 8, wherein at least one of the adhesive layer and the pressure-sensitive adhesive layer is laminated on an outer layer.
- 25 10. A laminated polarizing plate comprising an optical film and a polarizer, wherein the optical film is of claim 1.
- 30 11. A liquid crystal panel comprising a liquid crystal cell and an optical member arranged on at least one surface of the liquid crystal cell, wherein the optical member is selected from the group consisting of the optical film according to claim 1 and the laminated polarizing plate according to claim 10.
- 35 12. A liquid crystal display comprising a liquid crystal panel, wherein the liquid crystal panel is of claim 11.
- 40 13. A self-light-emitting display comprising at least one of the optical film according to claim 1 and the laminated polarizing plate according to claim 10.